

**REMARKS**

Claims 21-42 are pending. By this Amendment, claims 21, 23, 26, 30, 32, 35 and 38 are amended, and claims 41 and 42 are added. Reconsideration in view of the above amendments and the following remarks are respectfully requested.

Claims 32 and 35 are objected to as allegedly failing to further limit the subject matter of a previous claim. This objection is respectfully traversed.

Claims 32 and 35 have been amended to depend from claim 30 to avoid the rejection. These amendments also make clear that the methods of claims 31 and 34 occur during hydrolysis and condensation, while the methods of claims 32 and 35 occur after such.

Reconsideration and withdrawal of the objections are respectfully requested.

Claim 21 was rejected under 35 U.S.C. §112, second paragraph as being indefinite as it is allegedly indefinite based on the phrase “for each subsequent silane”. By this Amendment, claim 21 as well as claims 30 and 38 have been amended to delete the subject phrase.

Claims 23, 26, 32 and 35 were rejected under 35 U.S.C. §112, second paragraph. Claims 23, 26, 32 and 35 have been amended herein to address the Examiner’s concerns. For example, claim 23 clarifies that it is the total mass of the paste when finished that is the relevant measure, based on paragraph [0045] of the original specification as published. Also, claims 32 and 35 now depend from claim 30 for the reasons explained above.

In regard to claim 26, the phrase “preferably in the form of at least one of the oxides of Si and Al” has been canceled from claim 26 and included in new claim 41, dependent from claim 26.

In addition, claim 35 has been amended to depend from claim 34, consistent with the Examiner’s understanding.

Reconsideration and withdrawal of the §112 rejections are respectfully requested.

Claims 21-29 and apparently 30, 33 and 36 were rejected under 35 U.S.C. § 102(b)/§ 103(a) over Kalleder et al. (WO 01/23190). This rejection is respectfully traversed.

Claim 21 is directed to an enamel-free paste with a matrix based upon a Si-polymer that can be obtained by the hydrolysis and condensation of at least one silane of a general formula  $R_xSi(OR')_{4-x}$  with at least one polysiloxane of general formula  $[R_2SiO]_y$ , or  $R_3Si-(O-SiR_2)_y-O-SiR_3$ , respectively, wherein said radicals R can independently be alkyl, aryl, arylalkyl, alkylaryl or H, said radicals R' can independently be H, methyl, ethyl, n- or i-propyl, n-, iso-, sec- or tert-butyl, x represents 0 or 1 (for the first silane), x represents 0, 1, 2, 3, or 4, and y represents a whole number, which is at least 2 and can be approximately infinite, wherein said paste additionally includes a high-boiling organic solvent with a boiling point of 100°C. or above, and a pigment as the solvent, but contains no alcohol with a boiling point of substantially below 100°.

Enamel-free pastes do not suffer from the disadvantages of enamel pastes. As stated in paragraph [0008] of the Applicants' published specification, enamel pastes in a classical enamel pattern "require temperatures of partially more than 500 for the burning-in process, however, in order to enable the glass flow of the frit. At these kinds of temperatures, however, substantial pre-stressing losses of the glass can occur. At the same time the aggressive glass frit microcracks inherent in manufacturing are enlarged, which are located in the glass surface. Both lead to a dramatic loss of stability of the pre-stressed Borofloat glass on one hand, and increase the risk of the glass breaking at the temperature usually present in pyrolysis ovens, or with impact forces, on the other hand. Furthermore, such classical enamel patterns provide an insufficient bond to the surface of Borofloat glass." Enamel-free pastes of the claimed invention, in contrast, do not suffer from these disadvantages.

As an added advantage, the claimed invention is directed to fully hydrolyzed and condensed enamel-free paste that are stable and suitable for silk screening process and suitable for opaquely imprinting glass and which do not emit harmful emissions. See, Applicants' printed Specification, paragraph [0016]. Because of the claimed

compositions unique formulation, the composition may be used without any physiologically precarious heavy metals, or their oxides, respectively – see claim 42- that releases any harmful emissions at temperatures up to 420°C. Id. In contrast, Kalleder's compositions, comprising partially hydrolyzed and polycondensed products, has a primary purpose for the production of conductor tracks and decorative patterns. See, Kalleder, Abstract. Conductive printing pastes containing conductive fillers. See, Kalleder, col. 2, lines 29-34. Thus, Kalleder advocates the use of aluminum, gold, silver copper nickel, chromium, molybdenum, tungsten, tin oxide, indium tin oxide, lead zirconate titanate and graphite as fillers and optimizes its paste for these fillers. Kalleder, col. 4, lines 57-62. The claimed compositions, on the other hand, freed from having to accommodate conductive fillers, have an additional advantage of being able to use fully hydrolyzed and fully condensed products which are not taught by Kalleder.

Kalleder et al. does not teach or suggest this subject matter. For example, Kalleder et al. is directed to a priming paste which has partial hydrolysis and partial polycondensation of the hydrolysable compound. See column 2 and 3 of Kalleder et al. Kalleder et al. states that the degree of condensation is, for example, 20-80%, preferably 40-60%. In contrast, claims 1 and 30 are directed to an enamel-free paste with no alcohol and with a boiling point substantially below 100°C. Since a by-product of hydrolysis and polycondensation is alcohol, this indicates that the claimed invention is directed to paste with complete hydrolysis and complete condensation. For this reason, the claimed invention is not anticipated by Kalleder et al. In fact, by teaching partial hydrolysis and partial polycondensation, Kalleder et al. teaches away from the claimed invention directed to complete hydrolysis and condensation so that the claimed invention is not obvious in view of Kalleder et al.

Reconsideration and withdrawal of the rejection are respectfully requested.

Claims 31, 32, 34 and 35 were rejected under 35 U.S.C. §103(a) over Kalleder et al. These claims depend from claim 30, either directly or indirectly, and are patentable by virtue of that dependency, in addition to the further features they recite.

Reconsideration and withdrawal of the rejection are respectfully requested.

Claims 38-40 were rejected under 35 U.S.C. §103(a) over Kalleder et al. in view of Schmidt (U.S. Patent No. 5,731,091). This rejection is respectfully traversed as Schmidt was relied upon to teach a silkscreen process and does make up for the deficiencies noted above with regard to Kalleder et al., regardless of whether Schmidt teaches silkscreening.

Reconsideration and withdrawal of the rejection are respectfully requested.

Applicants respectfully request entry of the present Amendment. If the Examiner has any questions regarding this amendment, the Examiner is requested to contact the undersigned. If an extension of time for this paper is required, petition for extension is enclosed.

Respectfully submitted,

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